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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/694,870	10/24/2000	Dan M. Griffin	907.0009USU	2361
29683	7590	09/12/2005		
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			EXAMINER MATTIS, JASON E	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/694,870	<b>Applicant(s)</b> GRIFFIN ET AL.	
	<b>Examiner</b> Jason E. Mattis	<b>Art Unit</b> 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 2,8 and 12-16 is/are allowed.  
 6) ☒ Claim(s) 1,3-7,9-11 and 17-19 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

1. This Office Action is in response to the amendment filed on 6/9/05. New claims 17-19 have been added. Claims 1-19 are currently pending in the application.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-7, 9-11, 17, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Schilling (U.S. Pat. 6269092).

**With respect to claim 1**, Schilling discloses a method for operating a communication device **(See the abstract of schilling for reference to a method of operating a remote station, which is a communication device)**. Schilling also discloses during a receive period, receiving a first carrier and deriving a receiver tracking signal that is indicative of a frequency shift between the received first carrier and a reference signal **(See column 6 line 64 to column 7 line 13 and Figure 4 of Schilling for reference to during a receive period, receiving a BS-channel-**

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sounding signal, at a frequency  $f_2$ , which is a first carrier, and deriving from the BS-channel-sounding signal a frequency representation or shift of the signal from a reference). Schilling further discloses shifting a receiver baseband signal by an amount and in a direction indicated by the receiver tracking signal (See column 7 lines 14-38 and Figure 4 of Schilling for reference to a frequency-adjust circuit 34 providing the frequency shift to a spread-spectrum receiver 31 to adjust the frequency of the spread-spectrum receiver, meaning the signal is shifted by an amount and in a direction to compensate for the frequency shift). Schilling also discloses during a next transmission period, shifting a transmitter baseband signal by an amount indicated by the receiver tracking signal and in a direction opposite to the direction indicated by the receiver tracking signal during the receive period (See column 7 line 61 to column 8 line 5 and Figure 5 of Schilling for reference to signal source 39 shifting a transmitter signal frequency in the opposite direction of the received signal frequency shift as indicated by the frequency-adjust circuit 34). Schilling further discloses transmitting a second carrier signal that is modulated in accordance with the shifted baseband signal (See column 7 line 61 to column 8 line 5 and Figure 5 of Schilling for reference to transmitting a signal using antenna 41).

With respect to claim 7, Schilling discloses a communication device comprising a receiver baseband subsystem and a transmitter baseband subsystem (See column 5 lines 38-58, column 6 line 43 to column 8 line 5 and Figures 2, 4, and 5 of Schilling for reference to a remote station 11, which is a communication device, comprising a receiver baseband subsystem, as shown in Figure 4, and a

**transmitter baseband subsystem, as shown in Figure 5). Schilling also discloses a receiver comprising circuitry that is operable during a receive period for receiving a carrier and for deriving a receiver tracking signal that is indicated of a frequency and phase shift between the received carrier and a reference signal (See column 6 line 64 to column 7 line 13 and Figure 4 of Schilling for reference to during a receive period, receiving a BS-channel-sounding signal, at a frequency  $f_2$ , which is a first carrier, and deriving from the BS-channel-sounding signal a frequency representation or shift of the signal from a reference). Schilling further discloses the receiver also comprising circuitry for rotating the frequency and phase of a receiver baseband signal by an amount and in a direction indicated by the receiver tracking signal (See column 7 lines 14-38 and Figure 4 of Schilling for reference to a frequency-adjust circuit 34 providing the frequency shift to a spread-spectrum receiver 31 to adjust the frequency of the spread-spectrum receiver, meaning the signal is shifted by an amount and in a direction to compensate for the frequency shift). Schilling also discloses a transmitter comprising circuitry that is operable during a next transmission period for generating a frequency for a transmitter baseband signal that is shifted by an amount indicated by the receiver tracking signal and in a direction opposite to the direction indicated by the receiver tracking signal (See column 7 line 61 to column 8 line 5 and Figure 5 of Schilling for reference to signal source 39 shifting a transmitter signal frequency in the opposite direction of the received signal frequency shift as indicated by the frequency-adjust circuit 34).**

**With respect to claim 17**, Schilling discloses a time division duplex code division multiple access communication system comprising a plurality of customer premises equipment and an access point that wirelessly communicate with one another with a CPE comprising receiver baseband means and transmitter baseband means (See column 5 lines 38-58, column 6 line 43 to column 8 line 5 and Figures 2, 4, and 5 of Schilling for reference to a TDD CDMA communication system including a plurality of remote stations 11, which are customer premises equipment, and a base station 12, which is an access point, that wirelessly communicate with one another with the remote station 11 comprising a receiver baseband subsystem, as shown in Figure 4, and a transmitter baseband subsystem, as shown in Figure 5). Schilling also discloses a means operable during a receive period of a carrier from the AP for deriving a receiver tracking signal that is indicative of an error between the received carrier and a reference signal (See column 6 line 64 to column 7 line 13 and Figure 4 of Schilling for reference to during a receive period, receiving a BS-channel-sounding signal, at a frequency  $f_2$ , which is a first carrier, and deriving from the BS-channel-sounding signal a frequency representation or shift of the signal from a reference). Schilling further discloses a means for correcting the frequency and phase of a receiver baseband signal by an amount and in a direction indicated by the receiver tracking signal (See column 7 lines 14-38 and Figure 4 of Schilling for reference to a frequency-adjust circuit 34 providing the frequency shift to a spread-spectrum receiver 31 to adjust the frequency of the spread-spectrum receiver, meaning the signal is shifted by an amount and in a direction

**to compensate for the frequency shift).** Schilling also discloses a means for sharing the correcting means between the receiver baseband means and the transmitter baseband means **(See Figures 4 and 5 of Schilling for reference to the frequency-adjust circuit being used and shared by both the receiver subsystem, as shown in Figure 4, and the transmitter subsystem, as shown in Figure 5).** Schilling also discloses a means operable during a next transmission period for operating the correcting means to vary the frequency of a transmitter baseband signal by an amount and in a direction opposite to the direction indicated by the receiver tracking signal for pre-compensating a transmitted carrier that is transmitted to the AP **(See column 7 line 61 to column 8 line 5 and Figure 5 of Schilling for reference to signal source 39 shifting a transmitter signal frequency in the opposite direction of the received signal frequency shift as indicated by the frequency-adjust circuit 34, thereby pre-compensating a signal that is transmitted to the base station 12).**

**With respect to claims 3 and 9,** Schilling discloses that the carriers convey CDMA communication signals **(See column 3 lines 32-42 of Schilling for reference to using CDMA signaling).**

**With respect to claims 4 and 10,** Schilling discloses that a TDD communication device comprises customer premises equipment and that a first carrier is received from a transmitter of an access point **(See column 5 lines 38-58, column 8 lines 31-45, and Figure 2 of Schilling for reference to a remote station 11, which is a TDD CPE device, receiving signals from base station 12, which is an access point).**

**With respect to claims 5, 11, and 19**, Schilling discloses that the receiver tracking signal is stored for use during the next transmission period (**See column 6 line 43 to column 8 line 5 and Figures 4-5 of Schilling for reference to receiving the BS-channel-sounding signal and storing it to be processed to determine a phase shift that is used both in receiving signals and transmitting signals**).

**With respect to claim 6**, Schilling discloses that the shifting of the transmitter signal functions to pre-compensate the transmitted second signal to reduce carrier acquisition time at a receiver of the second signal (**See column 7 line 61 to column 8 line 5 and Figure 5 of Schilling for reference to pre-compensating a transmitted signal by shifting its frequency to reduce carrier acquisition time at a receiver**).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling in view of Giallorenzi et al. (U.S. Pat. 6810028).

**With respect to claim 18**, Schilling does not disclose that the CPE comprises a frequency to phase accumulator means coupled to receive the tracking signal and

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output computed to control an input of the correcting means. Schilling does disclose a sharing means to share a correction signal between the receiver baseband means and the transmitter baseband means (**See Figures 4 and 5 of Schilling for reference to the frequency-adjust circuit being used and shared by both the receiver subsystem, as shown in Figure 4, and the transmitter subsystem, as shown in Figure 5).**

**With respect to claim 18, Giallorenzi et al., discloses a frequency to phase accumulator means coupled to receive a tracking signal and output computed to control an input of the correcting means (See column 3 line 44 to column 4 line 29 and Figure 1 of Giallorenzi et al. for reference to using frequency-to-phase accumulators 22A and 22B with inputs coupled to receive a frequency correction command and an outputs coupled to control a correction means).** Using a frequency to phase accumulator means coupled to receive a tracking signal and output computed to control an input of the correcting means has the advantage of providing a simple circuit to determine a frequency and phase shift of a signal.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Giallorenzi et al., to combine using a frequency to phase accumulator means coupled to receive a tracking signal and output computed to control an input of the correcting means, as suggested by Giallorenzi et al., with the system and method of Schilling, with the motivation being to provide a simple circuit to determine a frequency and phase shift of a signal.

***Allowable Subject Matter***

6. Claims 2, 8, and 12-16 are allowed.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

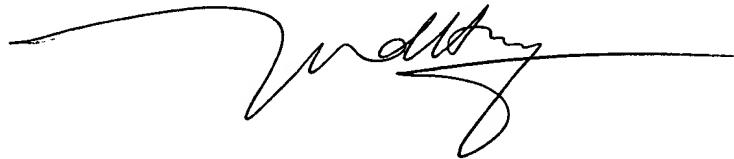
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal line extending to the right.

**HUY D. VU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**